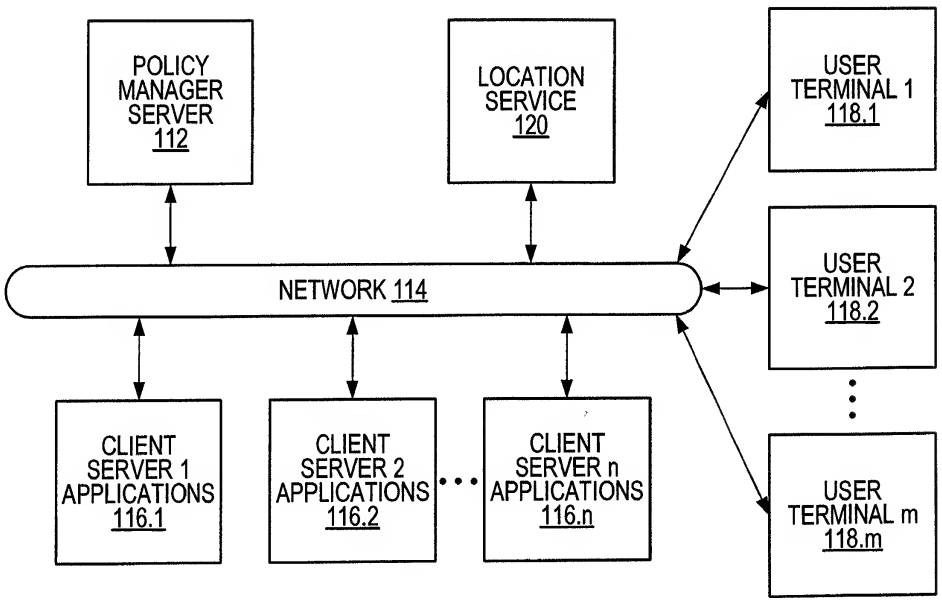
POLICY MANAGER SERVER 112
LOCATION SERVICE 120
USER TERMINAL 1 118.1
USER TERMINAL 2 118.2
USER TERMINAL m 118.m
NETWORK 114
CLIENT SERVER 1 APPLICATIONS 116.1
CLIENT SERVER 2 APPLICATIONS 116.2
CLIENT SERVER n APPLICATIONS 116.n
100

FIG. 1

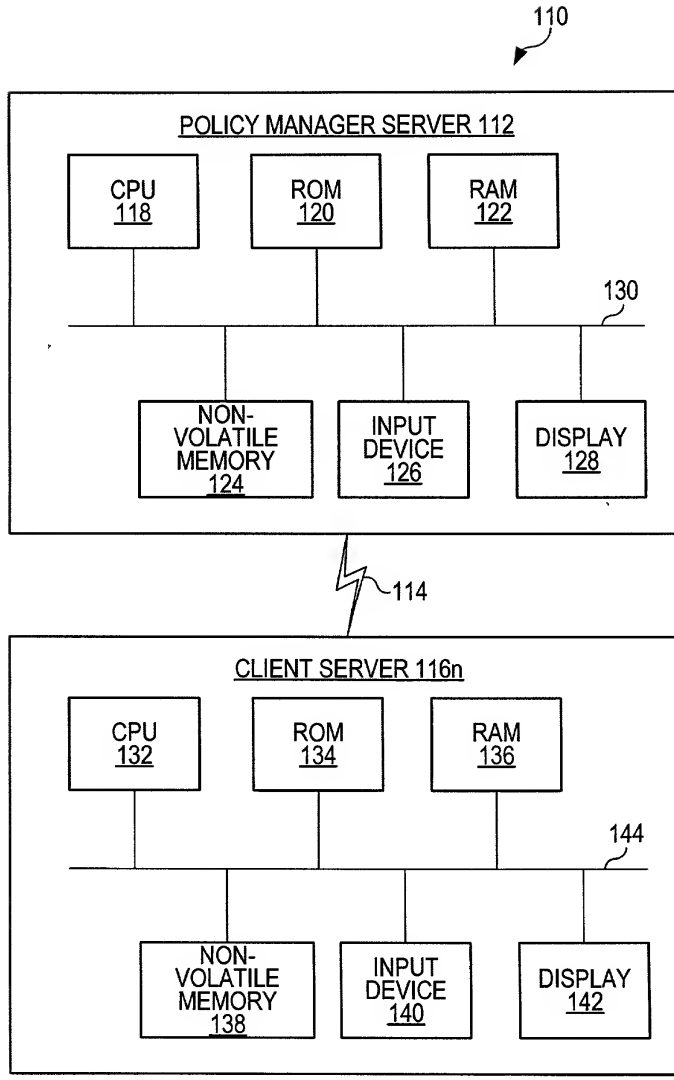
110
POLICY MANAGER SERVER 112
CPU 118
ROM 120
RAM 122
130
NON-VOLATILE MEMORY 124
INPUT DEVICE 126
DISPLAY 128
114
CLIENT SERVER 116n
CPU 132
ROM 134
RAM 136
144
NON-VOLATILE MEMORY 138
INPUT DEVICE 140
DISPLAY 142

FIG. 1A

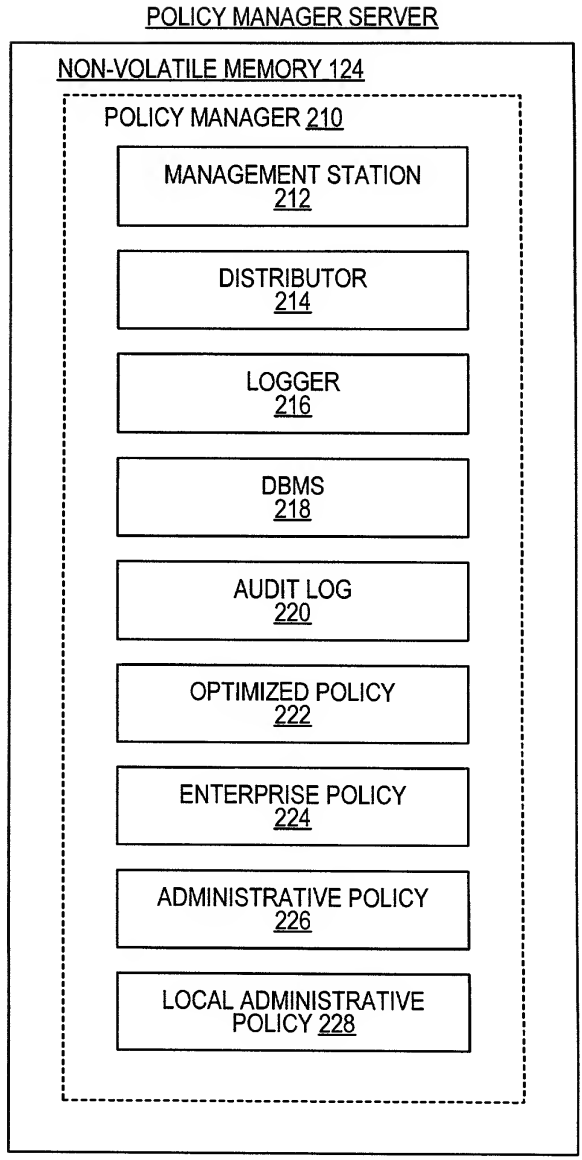
POLICY MANAGER SERVER
NON-VOLATILE MEMORY 124
POLICY MANAGER 210
MANAGEMENT STATION 212
DISTRIBUTOR 214
LOGGER 216
DBMS 218
AUDIT LOG 220
OPTIMIZED POLICY 222
ENTERPRISE POLICY 224
ADMINISTRATIVE POLICY 226
LOCAL ADMINISTRATIVE POLICY 228

FIG. 2

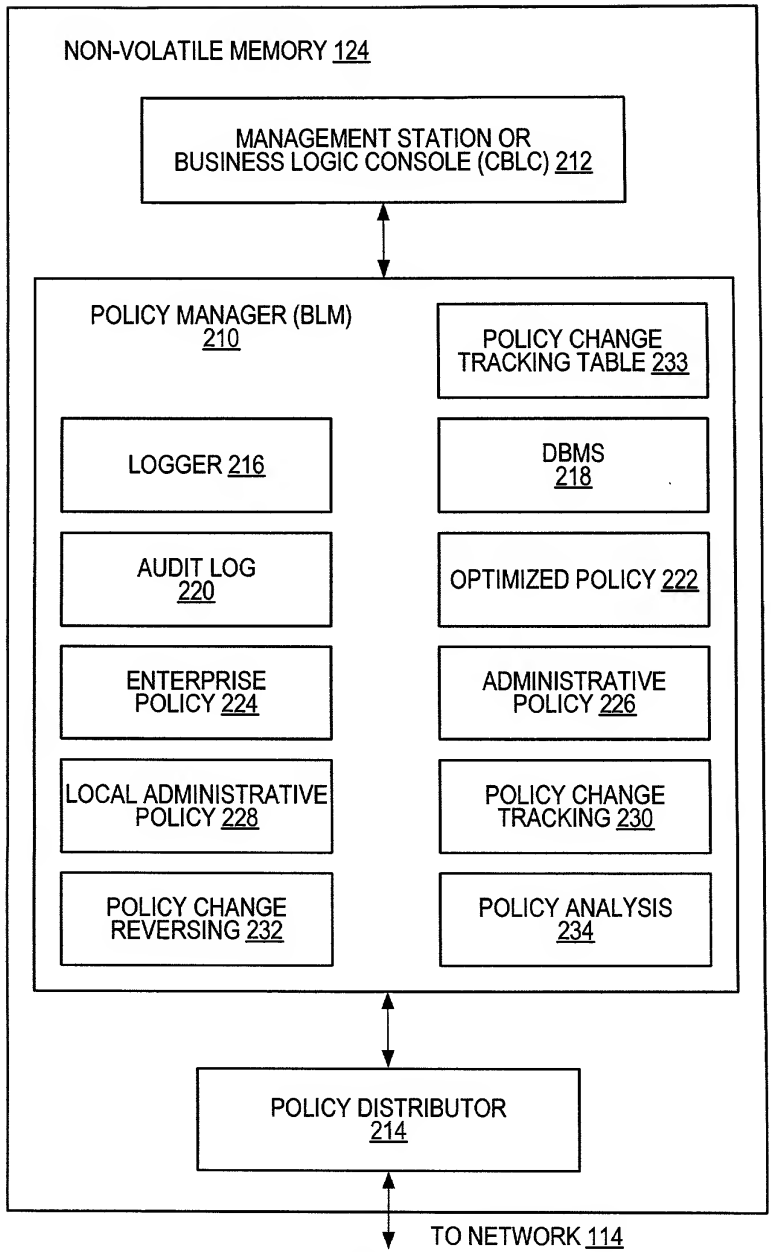
NON-VOLATILE MEMORY 124
MANAGEMENT STATION OR BUSINESS LOGIC CONSOLE (CBLC) 212
POLICY MANAGER (BLM) 210
POLICY CHANGE TRACKING TABLE 233
LOGGER 216
DBMS 218
AUDIT LOG 220
OPTIMIZED POLICY 222
ENTERPRISE POLICY 224
ADMINISTRATIVE POLICY 226
LOCAL ADMINISTRATIVE POLICY 228
POLICY CHANGE TRACKING 230
POLICY CHANGE REVERSING 232
POLICY ANALYSIS 234
POLICY DISTRIBUTOR 214
TO NETWORK 114

FIG. 2A

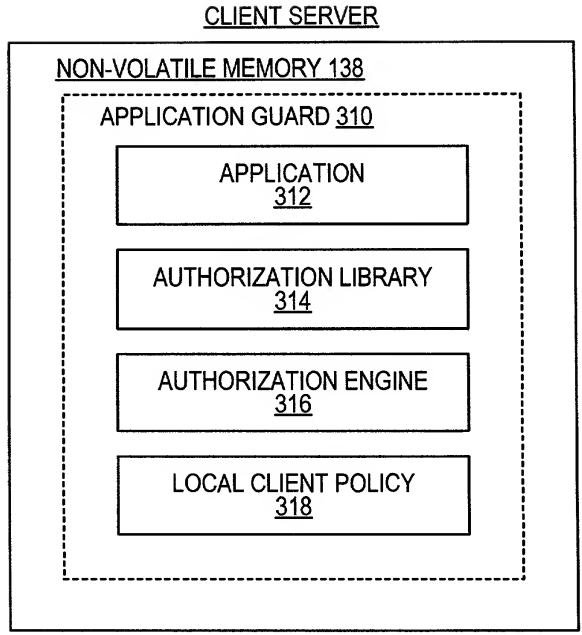
CLIENT SERVER
NON-VOLATILE MEMORY 138
APPLICATION GUARD 310
APPLICATION 312
AUTHORIZATION LIBRARY 314
AUTHORIZATION ENGINE 316
LOCAL CLIENT POLICY 318

FIG. 3

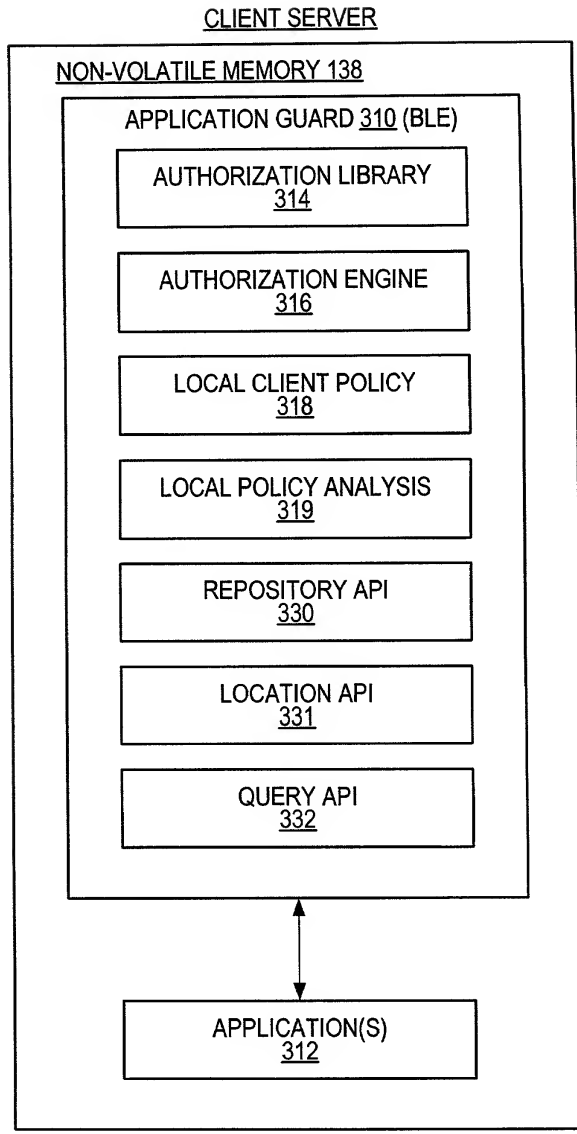
CLIENT SERVER
NON-VOLATILE MEMORY 138
APPLICATION GUARD 310 (BLE)
AUTHORIZATION LIBRARY 314
AUTHORIZATION ENGINE 316
LOCAL CLIENT POLICY 318
LOCAL POLICY ANALYSIS 319
REPOSITORY API 330
LOCATION API 331
QUERY API 332
APPLICATION(S) 312

FIG. 3A

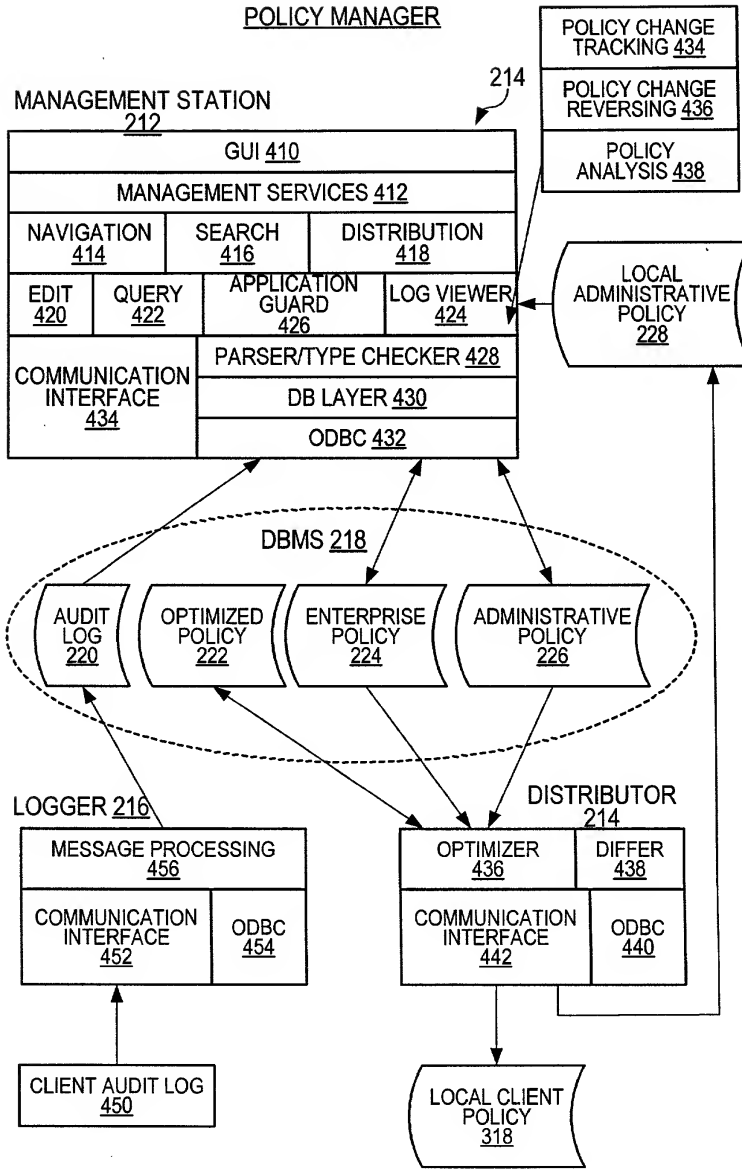
POLICY MANAGER
214
MANAGEMENT STATION
212
GUI 410
MANAGEMENT SERVICES 412
NAVIGATION 414
SEARCH 416
DISTRIBUTION 418
EDIT 420
QUERY 422
APPLICATION GUARD 426
LOG VIEWER 424
COMMUNICATION INTERFACE 434
PARSER/TYPE CHECKER 428
DB LAYER 430
ODBC 432
POLICY CHANGE TRACKING 434
POLICY CHANGE REVERSING 436
POLICY ANALYSIS 438
LOCAL ADMINISTRATIVE POLICY 228
DBMS 218
AUDIT LOG 220
OPTIMIZED POLICY 222
ENTERPRISE POLICY 224
ADMINISTRATIVE POLICY 226
LOGGER 216
MESSAGE PROCESSING 456
COMMUNICATION INTERFACE 452
ODBC 454
CLIENT AUDIT LOG 450
DISTRIBUTOR 214
OPTIMIZER 436
DIFFER 438
COMMUNICATION INTERFACE 442
ODBC 440
LOCAL CLIENT POLICY 318

FIG. 4

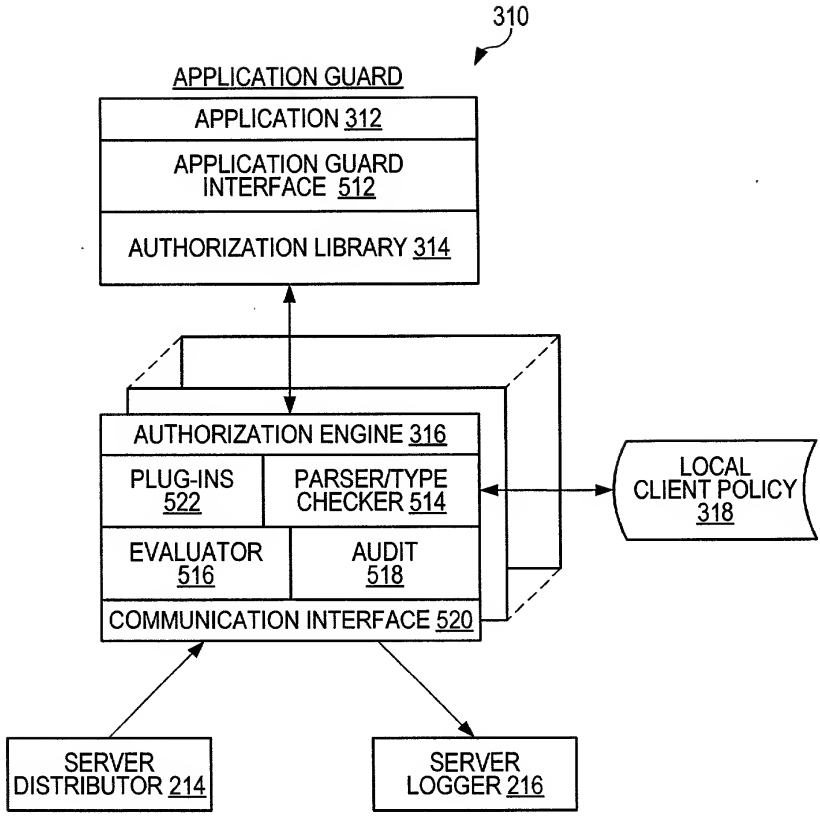
310
APPLICATION GUARD
APPLICATION 312
APPLICATION GUARD INTERFACE 512
AUTHORIZATION LIBRARY 314
AUTHORIZATION ENGINE 316
PLUG-INS 522
PARSER/TYPE CHECKER 514
EVALUATOR 516
AUDIT 518
COMMUNICATION INTERFACE 520
LOCAL CLIENT POLICY 318
SERVER DISTRIBUTOR 214
SERVER LOGGER 216

FIG. 5

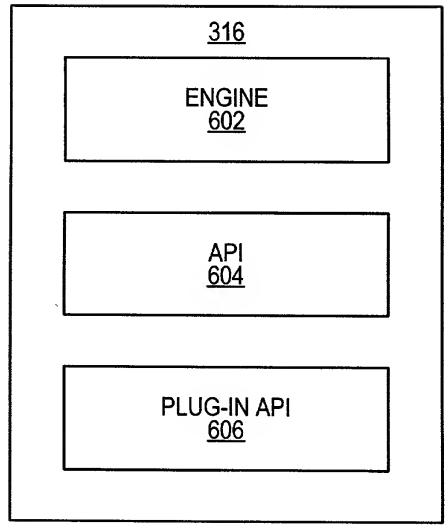

FIG. 6

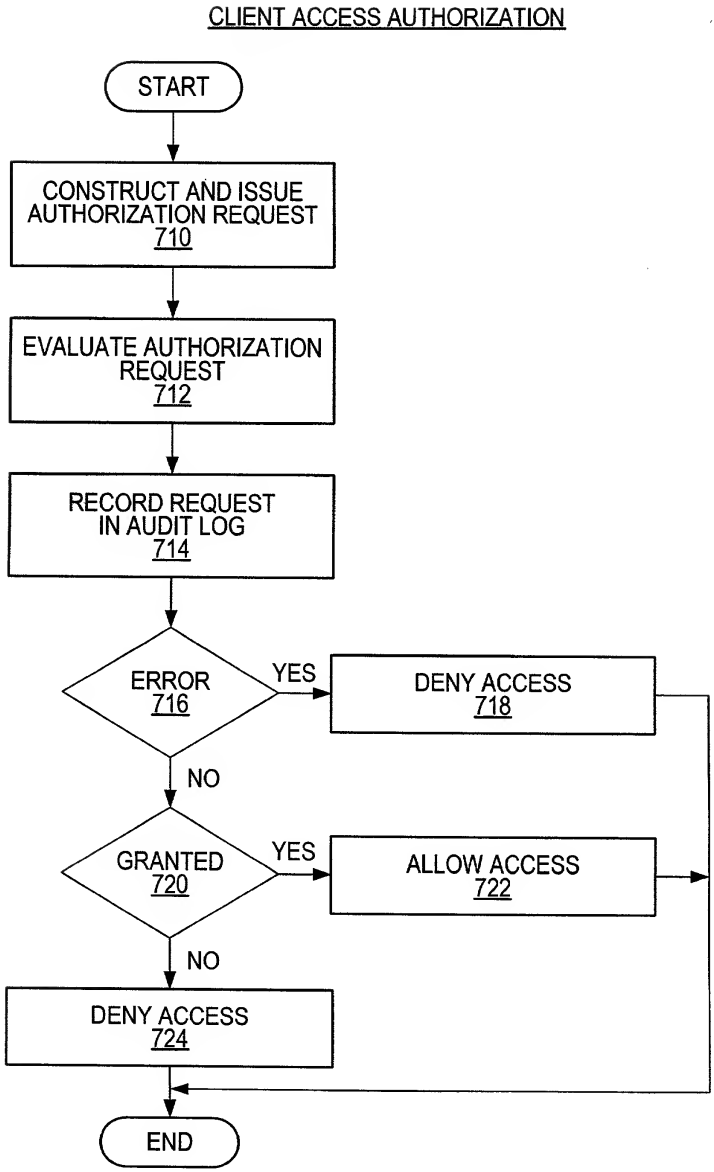
CLIENT ACCESS AUTHORIZATION
START
CONSTRUCT AND ISSUE AUTHORIZATION REQUEST 710
EVALUATE AUTHORIZATION REQUEST 712
RECORD REQUEST IN AUDIT LOG 714
ERROR 716
YES
DENY ACCESS 718
NO
GRANTED 720
YES
ALLOW ACCESS 722
NO
DENY ACCESS 724
END

FIG. 7

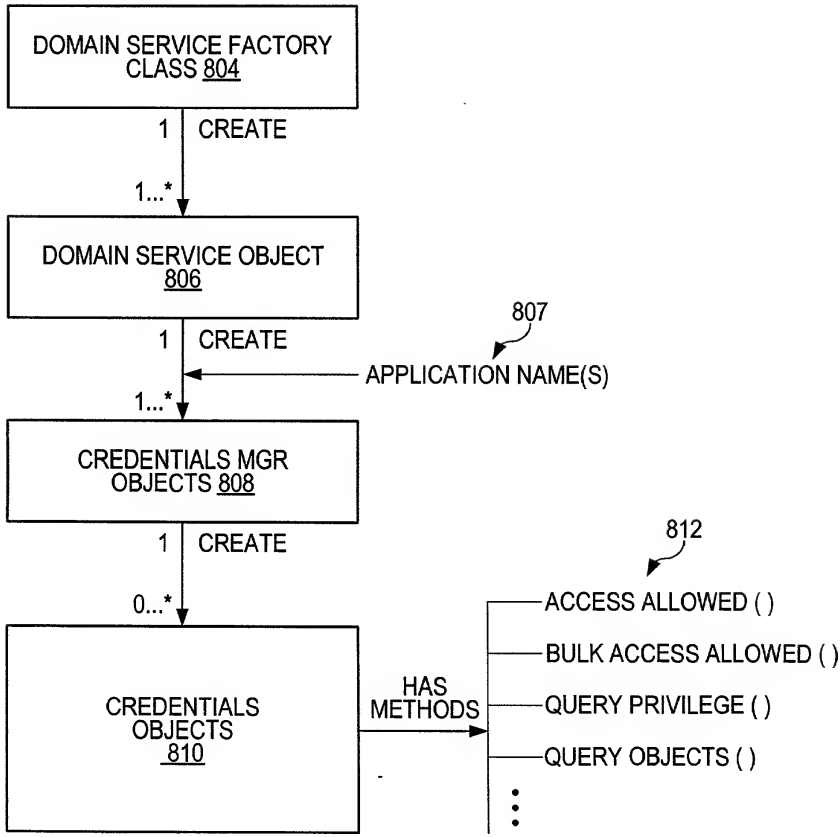
DOMAIN SERVICE FACTORY CLASS 804
1
CREATE
1...*
DOMAIN SERVICE OBJECT 806
1
CREATE
807
APPLICATION NAME(S)
1...*
CREDENTIALS MGR OBJECTS 808
1
CREATE
812
0...*
ACCESS ALLOWED ( )
BULK ACCESS ALLOWED ( )
HAS METHODS
QUERY PRIVILEGE ( )
CREDENTIALS OBJECTS 810
QUERY OBJECTS ( )

FIG. 8

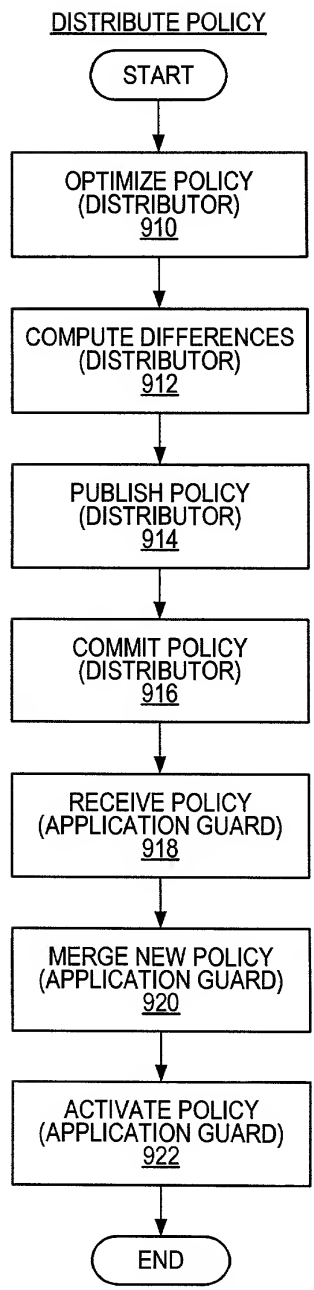
DISTRIBUTE POLICY
START
OPTIMIZE POLICY (DISTRIBUTOR) 910
COMPUTE DIFFERENCES (DISTRIBUTOR) 912
PUBLISH POLICY (DISTRIBUTOR) 914
COMMIT POLICY (DISTRIBUTOR) 916
RECEIVE POLICY (APPLICATION GUARD) 918
MERGE NEW POLICY (APPLICATION GUARD) 920
ACTIVATE POLICY (APPLICATION GUARD) 922
END

FIG. 9

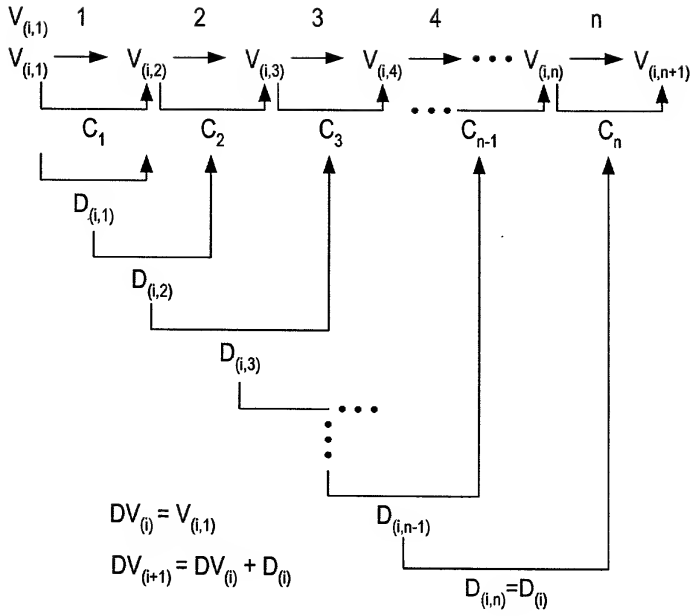
V(i,1)
1
2
3
4
n
V(i,1)
V(i,2)
V(i,3)
V(i,4)
V(i,n)
V(i,n+1)
C1
C2
C3
Cn-1
Cn
D(i,1)
D(i,2)
D(i,3)
D(i,n-1)
D(i,n)=D(i)
DV(i) = V(i,1)
DV(i+1) = DV(i) + D(i)

FIG. 10

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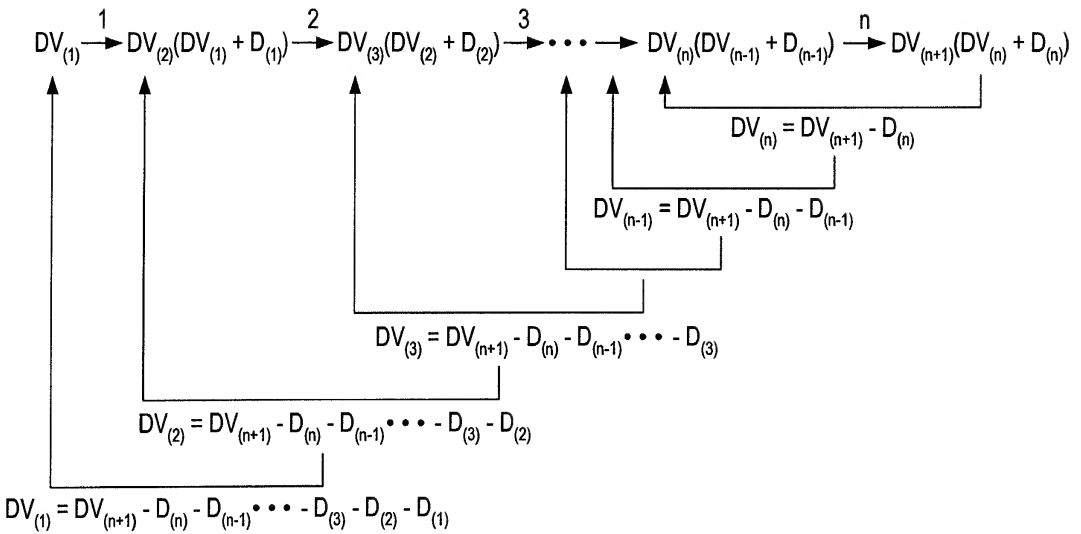

FIG. 11

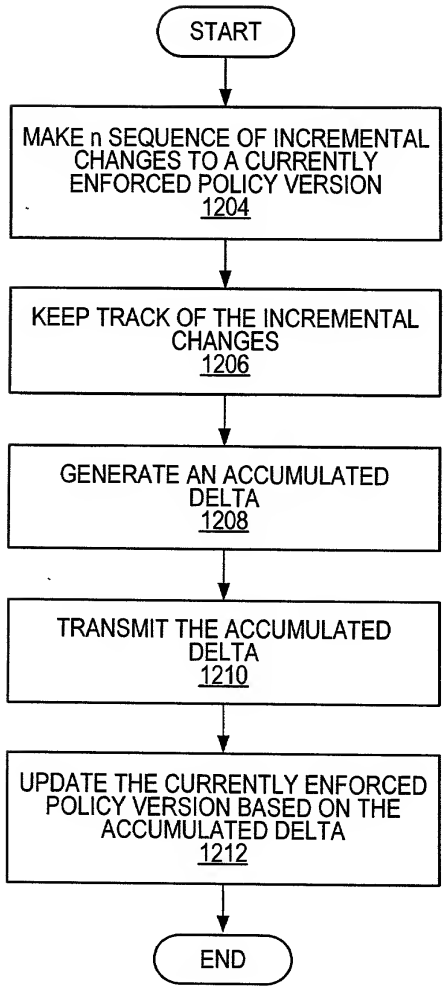
START
MAKE n SEQUENCE OF INCREMENTAL CHANGES TO A CURRENTLY ENFORCED POLICY VERSION
1204
KEEP TRACK OF THE INCREMENTAL CHANGES
1206
GENERATE AN ACCUMULATED DELTA
1208
TRANSMIT THE ACCUMULATED DELTA
1210
UPDATE THE CURRENTLY ENFORCED POLICY VERSION BASED ON THE ACCUMULATED DELTA
1212
END

FIG.12

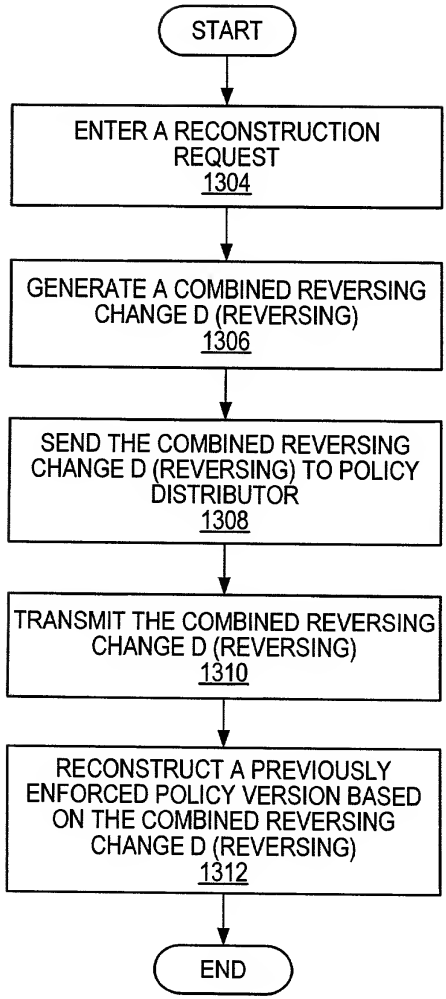
START
ENTER A RECONSTRUCTION REQUEST
1304
GENERATE A COMBINED REVERSING CHANGE D (REVERSING)
1306
SEND THE COMBINED REVERSING CHANGE D (REVERSING) TO POLICY DISTRIBUTOR
1308
TRANSMIT THE COMBINED REVERSING CHANGE D (REVERSING)
1310
RECONSTRUCT A PREVIOUSLY ENFORCED POLICY VERSION BASED ON THE COMBINED REVERSING CHANGE D (REVERSING)
1312
END

FIG.13

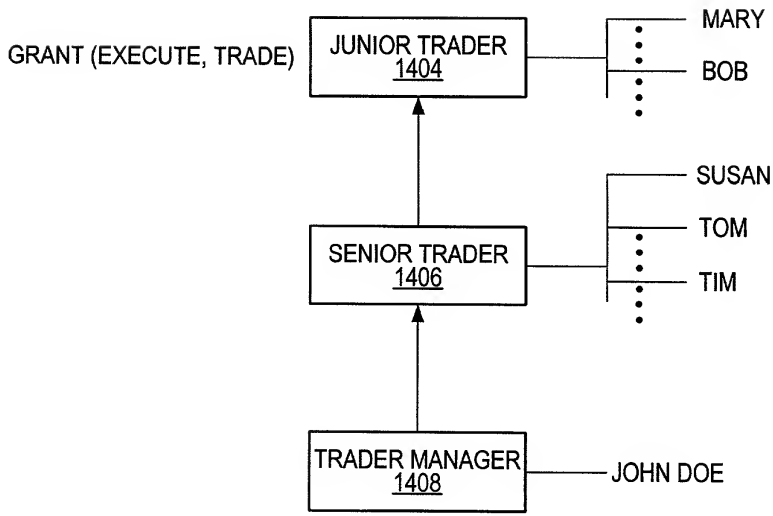
GRANT (EXECUTE, TRADE)
JUNIOR TRADER
1404
MARY
BOB
SENIOR TRADER
1406
SUSAN
TOM
TIM
TRADER MANAGER
1408
JOHN DOE

FIG. 14

Oracle-EX-1007

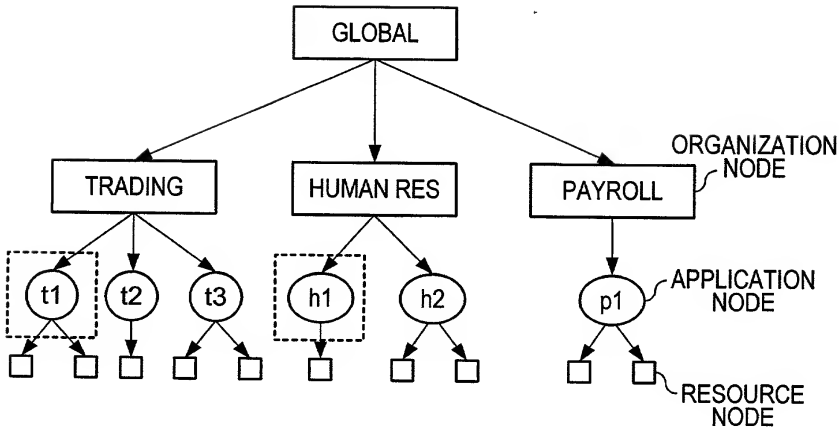

FIG. 15

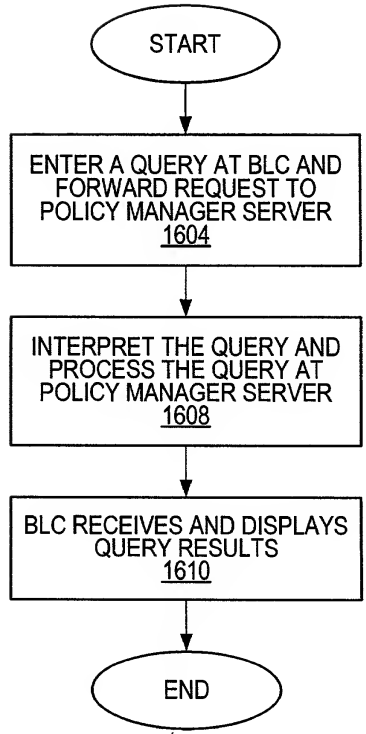
START
ENTER A QUERY AT BLC AND FORWARD REQUEST TO POLICY MANAGER SERVER
1604
INTERPRET THE QUERY AND PROCESS THE QUERY AT POLICY MANAGER SERVER
1608
BLC RECEIVES AND DISPLAYS QUERY RESULTS
1610
END

FIG. 16

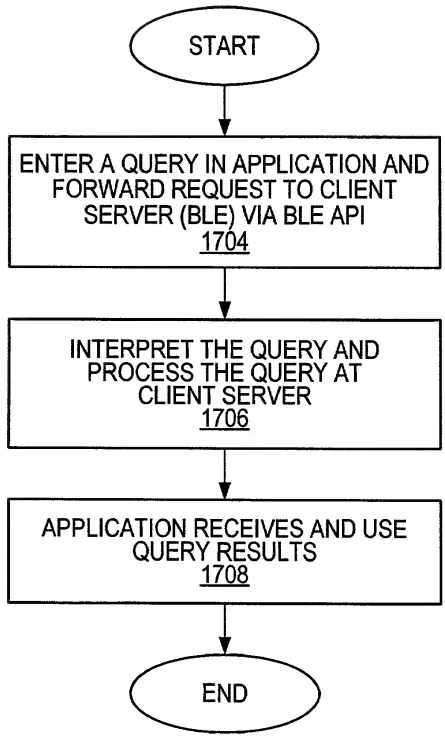
START
ENTER A QUERY IN APPLICATION AND FORWARD REQUEST TO CLIENT SERVER (BLE) VIA BLE API
1704
INTERPRET THE QUERY AND PROCESS THE QUERY AT CLIENT SERVER
1706
APPLICATION RECEIVES AND USE QUERY RESULTS
1708
END

FIG. 17